cut, and Florida. Examples of unique or innovative local programs were found in Cape Cod, Long Island, and Dade County. This section will focus on several components of these programs: designation of critical resource areas, zoning by-laws, health regulations, county and municipal ordinances, and state-level activities.

Critical Area Delineation

At the heart of the land use approach to ground water protection is the delineation of critical areas. Various methods and criteria have been employed, ranging from designation of entire geologic units to the delineation of areas of contribution for individual wells in local zoning programs. The complexity of the hydrogeologic setting and extent of the data base are major factors determining the method of critical area delineation. The aquifers in all three of the counties examined (Long Island, Dade County, and Cape Cod) were designated as sole-source aquifers under the federal Safe Drinking Water Act.

Hydrogeologic Zoning on Long Island The Long Island Regional Planning Board (LIRPB) created the concept of hydrogeologic zoning as the basis for local critical water protection area delineation. The hydrogeologic setting is relatively complex, with several interconnected aquifers. The data base is also extensive, built on more than 30 years of study by USGS and others. Through an understanding of the hydrology, areas were identified that contribute recharge water to the deep aquifer system. The hydrogeologic zoning scheme classifies those deep recharge areas as zones requiring critical protection. In addition to recharge conditions, current land use, ground water quality, and surface and ground water relationships were used to subdivide the recharge zones.

The LIRPB works with county health departments and the state DEC under planning grants to define the critical hydrogeologic zones in greater detail. In addition, USGS studies have provided information supporting the modification of the conceptual zones themselves. These developments illustrate several important factors in designation of critical areas. Ongoing planning and data collection have been necessary to refine the critical area designations. The fact that the boundaries require refinement over time has not weakened the usefulness or public acceptability of the concept on Long Island.

Not only have the hydrogeologic zones been updated, they have been subdivided and refined for different purposes. Working in cooperation with the New York DEC, the LIRPB has identified Special Protection Areas